

# HOMELAND SECURITY SUBCOMMITTEE

Conference Call Summary Wednesday, May 7, 2008 3:00 – 5:00 p.m. Eastern Time

#### Welcome

Dr. Gary Sayler, University of Tennessee, Subcommittee Chair

Dr. Gary Sayler, Chair of the Homeland Security Subcommittee, welcomed the Subcommittee members to the teleconference. After reviewing the names of Subcommittee members present on the call, he asked other participants, including those from EPA, to introduce themselves. Finally, he reviewed the agenda for the call.

#### **Administrative Procedures**

Mr. Greg Susanke, U.S. Environmental Protection Agency (EPA)/Office of Research and Development (ORD), Subcommittee Designated Federal Officer (DFO)

Mr. Greg Susanke, Subcommittee DFO, reviewed the Federal Advisory Committee Act procedures that are required for all Board of Scientific Counselors (BOSC) Subcommittee meetings. All public meetings of the Subcommittee must be published in the *Federal Register* at least 15 days prior to the meeting; the notice for this teleconference was published on March 17, 2008. An opportunity for public comment will be provided at 4:50 p.m. The minutes will be available on the BOSC Web Site and via the electronic docket. All meetings and conference calls involving substantive issues, whether in person, by phone, or by e-mail, that include one-half or more of the Subcommittee members must be open to the public, and the Subcommittee Chair and DFO must be present at all conference calls and meetings.

Mr. Susanke worked with EPA officials to ensure that all ethics requirements were met. If Subcommittee members discover a conflict of interest during any Subcommittee deliberations, including topics related to members' research, the DFO should be notified immediately.

### Overview—National Homeland Security Research Center Multi-Year Plan

Dr. Greg Sayles, EPA/ORD, Associate Director, National Homeland Security Research Center (NHSRC)

Dr. Greg Sayles, Associate Director of the NHSRC, explained that the Multi-Year Plan (MYP) communicates future activities, so this presentation focused on future plans instead of past accomplishments. This is a relatively new research program, and the first few years were spent establishing the Program and focusing on the nation's most important homeland security needs. This is the first time that the Program has developed a holistic, program-wide document addressing future strategies. The MYP is almost complete, and the Subcommittee members will receive the completed, draft document prior to the face-to-face meeting. From the information provided in this presentation, Subcommittee members should be able to begin thinking about the MYP in the context of the charge questions.

The MYP is organized into the following sections: Purpose of the Document, Relevancy and Design, Research Plan, Performance Metrics, Relationship to Other Research Programs, Planning and Communicating, and Appendices. The purpose of the MYP is to describe what the Program plans to address and accomplish during the next 3–4 years. It illustrates how the Program is designed to contribute to meeting Agency strategic goals, including overall goals and homeland security goals. The MYP communicates strategic research directions and planned major products, provides information to assist and support resource decisions, describes how the Program's performance will be measured, and explains the Program's planning and communication processes. The document serves many purposes and has evolved over time, but future plans remain the overarching theme.

The section on relevancy and design describes program drivers such as Homeland Security Presidential Directives (HSPDs), legislation, Department of Homeland Security (DHS) planning scenarios, the National Response Framework (NRF), strategic plans, and external expert advice. Dr. Sayles provided examples of how the HSPDs and legislation provide authority to EPA and how EPA responds via its tasks and responsibilities. For example, one HSPD designates EPA as the sector-specific agency lead for drinking water and water treatment systems.

Dr. Joseph Bozzelli asked whether EPA can provide funding to other agencies (e.g., the Department of Defense) with which it collaborates on homeland security issues. Dr. Sayles responded that EPA is given a budget and plans its work given this budget. If the program needs capabilities outside its own to conduct certain aspects of the work better, then EPA will fund appropriate agencies to perform the work. Dr. James Romano, Jr., added that based on his experience, other agencies also fund EPA in situations in which EPA can provide better research.

Dr. Sayles continued explaining the elements of relevancy and design that help define the mission of the Agency and the Program in terms of homeland security, including DHS planning scenarios, which are standardized disaster scenarios for federal, state, and local planning. The NRF coordinates various federal agencies in all-hazards response and assigns EPA the primary responsibility for oil and hazardous materials response.

Dr. Sayles presented a slide illustrating how major strategic plans, including *The National Strategy for Homeland Security* and EPA's *Homeland Security Strategy*, relate to the MYP and contribute to each other. One plan, *The Water Security Research and Technical Support Action Plan*, has been used as a predecessor to the MYP since the start of the Program and has been reviewed by the National Academy of Sciences (NAS). EPA has a series of roles and responsibilities in dealing with water infrastructure issues and outdoor and indoor area issues when responding to terrorist events. These roles and responsibilities follow a specific event chronology: (1) protect water systems against attacks; (2) monitor, detect, and confirm a chemical/biological/radiological (CBR) attack on a water system (and for other situations depending on the nature of the contamination); (3) minimize public exposure to contamination; (4) characterize the nature and extent of the contamination; (5) assess the risk to human health and establish clean-up goals; and (6) clean up the site.

Dr. Lindell Ormsbee asked whether EPA considers distribution systems when examining water infrastructure. Dr. Sayles replied that EPA is tasked with protecting drinking water and wastewater systems. Most work has been performed on drinking water systems and a transition to include more wastewater work is occurring within the next few years. Much of the risk to drinking water systems is associated with distribution systems, so much of the water work has focused on this area, but other preparations are ongoing as well. EPA is working with DHS on cyber protection systems for drinking water. The research is holistic regarding drinking water systems with a focus on distribution systems.

Dr. Ormsbee asked which agency examines supply issues. Dr. Sayles answered that EPA is responsible for this as well. Part of EPA's drinking water mission in general is to protect source water; one specific part of this mission relates to terror attacks.

Ms. Ellen Raber asked whether one area of research involved clearance of the site following cleanup. Dr. Sayles replied that this is the last part of the cleanup process, and analytical techniques and strategies that are sensitive enough to clear the site after cleanup are necessary.

The primary clients of NHSRC are EPA's Office of Water (OW) and Office of Solid Waste and Emergency Response (OSWER). OW is responsible for carrying out water sector-specific lead agency duties, and OSWER has broad responsibilities in response to indoor and outdoor area incidents of national significance. The Program initially worked to meet the highest priority needs of a broad group of stakeholders but, because of worries about resources being spread too thinly, it now focuses on its primary clients to ensure that EPA's homeland security needs are being met. Other important stakeholders include the regions; the Office of Prevention, Pesticides, and Toxic Substances; the Office of Air and Radiation; states and local authorities; and water utilities.

The Long-Term Goals (LTGs) have been designed to ensure the Program's ability to meet the needs of its primary clients. These LTGs are the drivers for Program design and research. LTG 1 states that OW, water utilities, and other clients use Homeland Security Research Program products and expertise to improve protection from and capability to respond to terrorist attacks on the nation's water and wastewater infrastructure. LTG 2 states that OSWER and other clients use Homeland Security Research Program products and expertise to improve the capability to respond to terrorist attacks affecting buildings and the outdoor environment.

Dr. Sayler commented that the LTGs essentially are worded as expected outcomes rather than goals and asked whether this was deliberate. Dr. Sayles replied that the LTGs were deliberately worded as outcomes in response to needs. The goal is to listen to the client and plan the work with enough detail and forethought that all resulting products are useful. The Program attempts to achieve these goals and prove that the products are used.

Annual planning is a deliberate process. Under LTG 1, the Program regularly communicates with the OW Water Security Division and collaborates on thematic workgroups (e.g., Water Security Initiative, decontamination). Under LTG 2, the Program plans research with the TRIO advisory group that includes EPA's Office of Emergency Management and Office of Solid Waste, on-scene coordinators, removal managers, regional risk assessors, and special response teams. The Program also counts on external expert advice for planning guidance, including the BOSC, EPA's Science Advisory Board (SAB), and the NAS.

EPA has a broad mission in response to disasters, and NHSRC focuses on terror events and providing the science that the Agency needs to meet its responsibilities in this area. The Program addresses EPA research needs for preparing for and responding to terrorist attacks; priority is given to projects that result in products with multiple benefits, maximizing the utility of the research to the broader EPA mission. For example, distribution system monitoring research is driven by the desire to put detection systems in place; these detection systems can be used for water quality monitoring of contaminants that do not involve a terror event.

The NHSRC research plans are described in the context of the terror event chronology mentioned above and are driven by primary research questions. The primary research question for protecting water systems involves the physical security of water supplies and vulnerability assessment methodologies. The primary research questions related to monitoring, detecting, and confirming a CBR attack are: 1) What are the most effective strategies to monitor and detect purposeful contamination of drinking water distribution and wastewater collection systems?; 2) What methods are needed to confirm a CBR attack to support an appropriate response?; 3) What is the performance of commercially ready detectors?; and, 4) What additional detection technologies need development? The primary research questions related to minimizing public exposure are: 1) What is the fate and transport of CBR agents released outdoors, into buildings, and into water systems?; 2) What strategies can be developed to minimize the public's contact with CBR contamination in water and inside and outside buildings?; and, 3) What exposures to CBR

agents are acceptable? In terms of characterizing the nature and extent of contamination, EPA has a responsibility to develop a laboratory network (i.e., the Environmental Response Laboratory Network). To help in this effort, the Program asks the following primary research questions: 1) What sampling, sample preparation, and analytical methods should be used to characterize the level and extent of CBR contamination following an act of terrorism and confirm successful decontamination?; and, 2) How can scientifically sound laboratory capacity be established in preparing for and responding to a CBR attack? The primary research questions related to assessing risk and establishing cleanup goals are: 1) How can risk assessment methodologies for CBR contamination be improved?; 2) What are the risk-based cleanup goals for CBR agent-contaminated water infrastructure and indoor and outdoor areas?; 3) What additional exposure, hazard, and effects data are needed to reduce uncertainties in risk assessments and risk-based cleanup goals?; and, 4) What improvements can be made in communicating risks and risk management alternatives? Finally, in terms of site cleanup, the primary research questions are: 1) How can CBRcontaminated water infrastructure, water, and indoor and outdoor areas be cleaned effectively?; 2) How can remediation efforts be monitored to ensure effective cleanup? 3) What is the performance of commercially ready cleanup technologies?; and 4) What are effective options for disposal of the residuals associated with decontamination efforts?

Dr. Sayler asked whether these topic areas would be covered in the poster sessions at the face-to-face meeting. Dr. Sayles replied that these topics had been condensed into three main topics for the poster sessions: (1) prevention and detection; (2) containment, mitigation, and exposure minimization; and (3) cleanup.

The Program's overarching strategic directions have changed emphases as a result of input from the White House Homeland Security Council, SAB, and NAS. The two major areas of need involve anthrax-contaminated "wide-areas" and dirty bomb decontamination; the Program has placed greater emphasis on performing research to allow the nation to be better prepared in these areas. As event detection work matures, the Program will develop decontamination approaches for water infrastructure. Also, the SAB and NAS suggested an increased focus on risk and risk management communication. Development of advisory levels for exposure, standardized and validated sample preparation and analytical methods, and microbial risk assessment have maintained a steady emphasis within the Program.

The MYP's performance metrics contain a cascade from large to small measures that ORD has implemented for its programs, including LTGs, Annual Performance Goals (APGs), Annual Performance Measures (APMs), and other indicators of performance. The LTGs are the Program's overarching, longterm goals, and the APGs are annual goals that help meet the LTGs. APMs are annual deliverables and milestones that help the Program meet the APGs and LTGs. The LTGs have been implemented very recently; the extent to which the Program has met these goals will be assessed in 2012 with the BOSC's help. APGs describe the research that contributes to each LTG by aggregating the event chronology steps into three areas: (1) prevention and detection techniques, (2) minimizing exposure and adverse health effects, and (3) decontamination and cleanup. Many of the APMs can be applied to both LTGs, but it is necessary to assign each APG to one LTG. Dr. Sayles briefly outlined some examples of APMs, including microbial risk assessment, decontamination, and cleanup. In addition to LTGs, APGs, and APMs, other indicators of performance include the number of product downloads from the NHSRC Web Site, client satisfaction surveys, bibliometric analysis of peer-reviewed journal articles, unsolicited feedback from clients and stakeholders, and program efficiency. All of these indicators work together to provide a story of performance. Program efficiency has been added as an indicator in response to Office of Management and Budget (OMB) requirements.

The MYP includes a chapter detailing the Program's relationship to intra-Agency programs and entities (e.g., National Program Directors, the Drinking Water Research Program, and the Human Health Risk Assessment Research Program) and external agency research. The Drinking Water Research Program includes a distribution system component as a result of the Safe Drinking Water Act, so the Homeland Security Research Program coordinates with this program to synthesize work in this area. The MYP also

includes a chapter about communication. Although not all MYPs address communication, Dr. Sayles thought that it was important to do so in the Homeland Security Research Program MYP to illustrate the Program's commitment in this area. One of ORD's challenges is to communicate research, especially with clients; by including communication goals in the MYP, ORD and its clients know that the Program is committed to communication.

In summary, the MYP describes planned research for 2008–2011 and establishes relevancy, drivers, clients, research questions, planned approaches, performance metrics, a commitment to a planning process with clients, and a commitment to communication.

Dr. Anil Nerode expressed his concern about breaking up the overarching goals into small tasks. A systems approach would be to examine the goals of final users (e.g., those tasked with cleaning up the water system) and ensure that the Program has supplied the necessary products for these users. This systems organization is missing from the MYP. Dr. Sayler explained that, although the Subcommittee should consider the APMs, it should focus primarily on the LTGs and APGs. Focusing on the APMs would require a detailed approach not suitable for the type of overarching review that the BOSC provides. Dr. Nerode contended that working back from the APMs can illustrate whether a natural progression was in place. Dr. Sayler agreed that transparency is important, but the BOSC's reviews should not be too prescriptive from a year-to-year perspective. In a few years, the Subcommittee will perform a mid-cycle review and examine the progress the Program has made toward its LTGs and APGs.

Dr. Ormsbee asked whether EPA examines how its deliverables are implemented to ensure that they are being used effectively. Dr. David Banks added that it may be helpful to speak to end users. Dr. Sayler explained that the Subcommittee would have the opportunity to speak with end users because NHSRC clients, including utilities, will attend the face-to-face meeting. Dr. Sayles stated that a representative from the American Water Works Association would attend the face-to-face meeting to represent utilities.

Dr. Daniel Walsh commented that the needs of non-EPA personnel represent one of the overarching themes; state and local first responders play a primary role in these potential events. He asked whether the client survey went beyond the scope of EPA users and whether the survey results would be available at the face-to-face meeting. Dr. Sayles responded that the report detailing the participants and results of the survey will be provided at the face-to-face meeting. The majority of those surveyed are from OW and OSWER because they are the primary clients of NHSRC, but all levels of personnel, including on-scene coordinators, were surveyed.

Dr. Nerode commented that stakeholders and the general public will be interested in the external personnel that they think EPA should be consulting. Dr. Sayles explained that meeting the needs of the Agency first is appropriate. An examination of these needs determined that there are large needs gaps, which NHSRC is working on filling for the Agency; external needs are met via EPA's program offices. Dr. Nerode commented that other EPA programs and committees consult external stakeholders to determine needs. Dr. Sayler explained that external clients are being addressed. He reminded the Subcommittee members that their report would be given to ORD, which in turn will use the report for many purposes, including satisfying Government Performance and Results Act and OMB Program Assessment Rating Tool requirements in which outcomes are the critical factors. The Subcommittee is interested in determining whether the Program is meeting its objectives in terms of outcomes, including those of external stakeholders and clients. He thought that Dr. Sayles did not mean that EPA is the only client of the NHSRC but that it is an important one. The BOSC uses the stated charge questions to be responsive to ORD's needs; Dr. Sayler reiterated the charge questions for the Subcommittee members.

Dr. Walsh commented that the homeland security arena raises questions that do not commonly arise in other EPA programs and suggested that if new questions arise that are not included in the BOSC charge, the Subcommittee still should address them. He asked whether it would be possible to examine the work that the Program has so far completed to understand how the Program has achieved its initial goals.

Dr. Sayler answered that a retrospective review is part of a BOSC review but would be difficult with a new program. Dr. Sayles added that the poster session at the face-to-face meeting will provide Subcommittee members with an understanding of why particular research areas have been established within the Program, the type of work performed under each area, and accomplishments. Dr. Sayles agreed with Dr. Walsh that new questions could be brought forward, as well as other findings and recommendations.

Ms. Raber stated that it is important to highlight which organizations NHSRC is leveraging to show the efficiency of the Program. Dr. Sayles responded that this aspect is included in the posters, but this area can be expanded at the face-to-face meeting if necessary.

Ms. Raber commented that state environmental protection agencies may be key stakeholders whose needs are not being met. In a homeland security context, these are the end users, and this link is important. Dr. Sayles responded that OW and OSWER communicate directly with EPA regions, which in turn have relationships with the states. The Program is designed to meet the needs of OW and OSWER, some of which apply to state agencies.

Dr. Romano suggested a discussion at the face-to-face meeting about how new opportunities are adjudicated and supported. Dr. Sayles replied that this definitely can be discussed if it is not sufficiently addressed in the posters.

The Subcommittee members commended Dr. Sayles on the quality and helpfulness of his presentation.

### **Preparation for Face-to-Face Meeting**

Dr. Gary Sayler, University of Tennessee, Subcommittee Chair

To ensure that the Subcommittee members know what to expect, Dr. Sayler reviewed the agenda for the face-to-face meeting. He suggested that the Subcommittee work collectively on each LTG, examining all of the charge questions relative to each LTG, and then break into two groups, each focused on one LTG. The Subcommittee members agreed to take this approach.

A Subcommittee member asked how many posters would be presented at the face-to-face meeting and whether someone would be available to explain each poster. Dr. Sayles explained that the Program had done its best to limit the number of posters to 24; some BOSC reviews include as many as 50–60 posters. One lead person has been assigned to each poster, and one to two additional staff members who work in the poster topic area also will be present.

Dr. Sayler stated that it would be necessary for the Subcommittee members to divide into teams to view all of the posters. Dr. Sayles explained that some posters highlight work performed across the two LTGs and are included in both poster sessions. Although 32 posters are listed between the two sessions, only 24 are unique. Dr. Sayler added that each poster must be adequately examined by the Subcommittee in terms of how it applies to program quality, the science involved, and how well the science meets the needs of the LTGs; however, it is not necessary for each Subcommittee member to review each poster.

Mr. Susanke commented that the easiest, most efficient manner in which to complete the poster review would be to divide the Subcommittee by LTG, so that one workgroup is focused on water infrastructure and the other is focused on buildings and outdoor areas. Each workgroup will address all of the charge questions within the context of its assigned LTG. Alternatively, workgroups could be assigned by charge question.

Because Ms. Raber is Vice Chair of the Subcommittee and because of her area of expertise, she will lead the workgroup on buildings and outdoor areas. Dr. Sayler will lead the water infrastructure workgroup. Drs. Ormsbee and Romano and Mr. Leo Lebaj requested to serve on the water infrastructure workgroup.

Drs. Banks, Bozzelli, and Walsh agreed to serve on the buildings and outdoor areas workgroup. Because Dr. Nerode will not be present for the entire face-to-face meeting, he will not be assigned to either workgroup and will, instead, provide overall comments.

A Subcommittee member asked whether the members have the opportunity to participate globally as well. Dr. Sayler explained that the two workgroups will meet and discuss the LTGs globally.

A Subcommittee member asked whether the posters would be available for viewing during the entire duration of the face-to-face meeting. Dr. Sayles replied that a room will be dedicated to the posters. LTG 1 posters will be up during the first day of the meeting, and LTG 2 posters will be up during the second day. Dr. Sayler reminded Subcommittee members that they also have paper copies and electronic versions of each poster that they can refer to at any point during the meeting.

#### **Public Comment**

Mr. Susanke called for public comment at 4:50 p.m. No comments were offered.

# **Preparation for Face-to-Face Meeting (continued)**

Dr. Sayler suggested that members begin to write down their thoughts so that some work is completed prior to the face-to-face meeting. The BOSC allows for considerable flexibility in report format. Dr. Sayler suggested that the report include a summary section that details Subcommittee recommendations, a chapter that provides an overview of the Program, a chapter devoted to LTG 1, a chapter devoted to LTG 2, an overall summary and assessment component, and appropriate appendices. Once the Subcommittee members have decided on a tentative report format, they will be able to more effectively draft their preliminary ideas about the Program. At Ms. Raber's suggestion, Dr. Sayler agreed to draft a strawman report outline and forward it to the members.

A Subcommittee member asked about the difference between the first summary section and the overall summary and assessment component. Dr. Sayler explained that the first summary section will include an explanation of how the Subcommittee approached the review as well as its recommendations; the summary and assessment section provides an overview about the Program, including its history and goals.

The members discussed the logistics of travel arrangements and flight information, and Mr. Susanke agreed to follow up with each of the members about their flights to the face-to-face meeting.

Mr. Susanke explained that members should expect three FedEx shipments during the next few weeks. Subcommittee members will receive a BOSC binder with 20 tabs via FedEx within the next couple of days; information and documents for 13 of the tabs will be sent with the binder. The members will receive a second FedEx package with the remaining documents the following week. Dr. Sayles will send the printed versions of the posters in a booklet via FedEx before the face-to-face meeting. At Dr. Nerode's suggestion, Mr. Susanke agreed to provide Subcommittee members with a FedEx label so that they can forward their binders to the meeting hotel. One reference binder also will be available at the face-to-face meeting.

A Subcommittee member asked for the web site at which they may access previous BOSC reports. Dr. Sayler referred the member to the BOSC Web Site at http://www.epa.gov/OSP/bosc. Ms. Raber commented that she had visited the Web site and found the Safe Pesticides/Safe Products report to be of good quality, whereas the Global Change report was very complicated. Dr. Ormsbee added that the Air and Global Change reports address many diverse topics.

Dr. Sayler thanked everyone for their participation and adjourned the meeting at 5:02 p.m.

# **Action Items**

- Mr. Susanke will follow up with each Subcommittee member regarding their travel arrangements.
- Mr. Susanke will send meeting binders and materials to the Subcommittee members via two FedEx shipments; FedEx labels will be included in one shipment so that Subcommittee members can forward their binders to the meeting hotel.
- Ø Dr. Sayles will send via FedEx a CD of the 24 posters that will be presented at the face-to-face meeting to the Subcommittee members prior to the meeting.

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### HOMELAND SECURITY SUBCOMMITTEE MEETING

AGENDA May 7, 2008 3:00 p.m. – 5:00 p.m. Eastern Time

Participation by Teleconference Only 866-299-3188 code: 2025648239#

3:00–3:05 p.m.	Welcome - Roll Call - Overview of Agenda	Dr. Gary Sayler, Subcommittee Chair
3:05–3:10 p.m.	Administrative Procedures	Greg Susanke, Subcommittee DFO
3:10–4:15 p.m.	Overview—National Homeland Security Research Center Multi-Year Plan	Dr. Greg Sayles, Associate Director, NHSRC/ORD
4:15–4:50 p.m.	Preparation for Face-to-Face Meeting - Review Agenda - Subcommittee Organization - Discuss Poster Review Process and Assignments - Discuss Draft Report Outline - Identification of Additional Information Needs	Dr. Gary Sayler, Subcommittee Chair
4:50–5:00 p.m.	Public Comment	
5:00 p.m.	Adjourn	